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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/527,811

09/22/2005

Lars Stigsson

1506-1081

2296

466

7590

09/06/2006

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EXAMINER

KINNEY, ANNA L

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/527.811

Applicant(s)

STIGSSON, LARS

Examiner

Anna Kinney

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 1-3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/14/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities: the word "on" in line 8 of the claim should be "one". Also, steps e), i), and ii) have periods at the end of the step. This is improper form for a claim. See MPEP 608.01(m). Each claim begins with a claim number and ends with a period. Periods may not be used elsewhere in the claims except in abbreviations. Appropriate correction is required.

Claim 2 is objected to because of the following informalities: the claim is missing a period at the end of the sentence. Appropriate correction is required.

Claim 3 is objected to because of the following informalities: the term "lignocellulosic" should be "lignocellulosic material". Appropriate correction is required.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-13 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-14 of prior U.S. Patent No. 6,946,057. This is a double patenting rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallick (US 4,248,662), with or without Bair et al (US 6,294,048).

With respect to claim 1, Wallick discloses an alkaline process for the production of a pulp from lignocellulosic material (Abstract, lines 1-4) and the recovery of pulping chemicals used in said process (col. 3, lines 3-14) comprising the steps of a) providing a feed stream of finely divided lignocellulosic material (col. 3, lines 35-39), b) contacting lignocellulosic material in a digester with an alkaline liquor, which the Examiner construes to be an aqueous buffer solution, comprising a sodium and a boron compound, during a period of time and at a temperature sufficient to obtain a stream of substantially delignified lignocellulosic material (col. 4, lines 8-32), c) further treating said substantially delignified lignocellulosic material to obtain a pulp product (col. 3, lines 1-2), d) extracting spent liquor comprising dissolved lignin components and spent chemical substances from step b) (col. 4, lines 35-40), e) partly or fully oxidizing spent liquor originating from step d) in a recovery boiler or gas generator (col. 5, lines 5-13) wherein i) a boron compound in the alkaline buffer solution originates from alkali borates in an aqueous liquid (col. 4, lines 25-32 and col. 8, lines 33-36), ii) the solid or liquid ash stream comprising sodium and boron compounds provided in step e) is dissolved in an

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aqueous solution to provide an alkaline buffer solution, whereof at least a portion is transferred to step b) or c) without prior subjection to treatment with lime or calcium compounds for the generation of hydroxide ions (col. 5, lines 5-13, col. 8, lines 33-36, and col. 4, lines 11-59).

Wallick does not disclose expressly that the sodium and boron compounds dissociate to provide metaborate ions, that the oxidized ash stream produces alkali metaborate and alkali carbonate when dissolved, what the molar or other concentration ratios of the various dissolved compounds, or that carbon dioxide is released upon liquor oxidation.

However, Wallick does disclose that the alkali materials are present at concentrations of from 0.01 to 2.0 molar and that the alkali is present in quantities of from 20 to 150 % by weight of the initial dry fibrous material (col. 4, lines 25-30), and further discloses an alkali liquor pH of between 8.0 and 13.0 (col. 3, lines 48-52). At the time of the invention, absent a showing of unexpected results, it would have been obvious to a person of ordinary skill in the art to optimize the concentration ratios of the various dissolved components to achieve production of a bright pulp with acceptable strength levels as well as a spent liquor with a high solids content enabling economical recovery (col. 5, line 63 – col. 6, line 2). Furthermore, the wide range claimed indicates a lack of criticality. It has been held that discovering the optimum or workable ranges or an optimum value of a result effective variable involves only routine skill in the art. See MPEP 2144.05 II. The Examiner considers the metaborate and carbonate ions resulting from dissolution, and the carbon dioxide resulting from spent liquor oxidizing,

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to be intrinsic to the nature of the boron compounds used and the carbon present in the lignin-containing spent liquor before oxidation.

If necessary, Bair discloses the use of borates in the recausticization of alkali-containing pulping liquors (col. 1, lines 11-15), with sodium to boron molar ratios exceeding 3:1 (Abstract), which contains one specific point within the claimed range of about 1:1 to about 10:1.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use molar ratios as described by Bair in the oxygen pulping method of Wallick to obtain the invention as specified in claim 1.

The motivation would have been to achieve high reaction efficiency (Abstract).

With respect to claims 2 and 3, Wallick discloses that the finely divided lignocellulosic material provided in step a) is subjected to a pre-treatment before contact with the alkaline buffer solution in step b), wherein the pre-treatment includes a mild prehydrolysis step wherein the lignocellulosic is heat treated by the action of steam and submerged in a hot aqueous solution (col. 3, lines 35-55).

With respect to claim 6, Wallick discloses a pulping process without resorting to the use of sulfur-containing compounds (col. 1, lines 11-15), which the Examiner construes to provide a concentration of sulphides in an aqueous alkaline buffer solution is lower than about 5 grams/litre.

With respect to claim 7, Wallick discloses further treating said substantially delignified lignocellulosic material to obtain a pulp product in c) comprises an alkaline oxygen delignification stage (col. 2, lines 21-26 and 40-60).

With respect to claims 8-10, Wallick discloses that at least a major portion of alkaline buffer solution used in step b) and in an oxygen delignification stage is recycled from a chemicals recovery system without prior subsection to treatment with lime or calcium compounds for the generation of hydroxide, and that the chemicals recovery system does not include a limekiln or causticizing plant for regeneration of pulping chemicals (col. 3, lines 3-14).

With respect to claim 13, Wallick is applied as in the rejection to claim 1, above.

Claims 4-5 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallick with or without Bair, as applied to claim 1 above, and further in view of Stigsson (WO 00/47812).

With respect to claims 4-5 and 11-12, Wallick and Bair do not disclose expressly adding a delignification catalyst.

With respect to claims 4-5 and 11, Stigsson discloses an alkaline process for the production of a pulp from lignocellulosic material and the recovery of pulping chemicals used in said process (Abstract) wherein a delignification catalyst is added, selected from aromatic organic compounds, ranging from about 0.1% up to 5% on wood, to be present during or immediately after prehydrolysis (pg. 14, lines 1-9 and pg. 39, lines 9-13), which contains one specific point within the claimed range of from 0.05% to 0.5% for claim 11.

With respect to claim 12, Stigsson discloses that sulfur chemicals in spent liquors are recovered as alkali sulfides (pg. 33, lines 19-21). Therefore, the Examiner construes

this to mean that the recovered alkaline liquor contains some amount of sulfide compounds, which would be present to act as a delignification catalyst.

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 4,116,759 shows delignification of pulp with alkaline liquor which is autocauticized.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Kinney whose telephone number is (571) 272-8388. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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